

WHAT IS CLAIMED IS:

1. A method for generating an optimized auction commodity distribution plan, the method comprising the steps of:

performing one or more elasticity computations for one or more past auction commodity products sold at one or more auction sites;

generating an auction forecast price for one or more present auction commodity products to be auctioned at said one or more auction sites using said one or more elasticity computations, wherein each of said present auction commodity products and said past commodity products have an associated commodity model type and a commodity model year; and

generating an optimized auction commodity distribution plan for said one or more present auction commodity products using said generated forecast price.

2. The method of claim 1, wherein said step of generating an auction forecast price comprises the steps of:

obtaining retail market performance data for one or more past retail commodity products sold at one or more retail sites;

obtaining regional data relevant to said one or more retail sites;

performing a regional trend analysis of sales for said one or more past retail commodity products using said retail market performance data and said regional data;

performing a seasonality analysis for said one or more past auction commodity products;

generating a time-series model for said one or more past retail commodity products using said regional trend analysis and said seasonality analysis; and

determining a price-level adjustment for said one or more

present auction commodity products based on said elasticity computations and said time-series model.

3. The method of claim 2, wherein said step of obtaining regional data relevant to said one or more retail sites comprises the steps of:

- retrieving local unemployment data;
- retrieving gross product growth data; and
- retrieving population growth data.

4. The method of claim 2, wherein said step of performing a regional trend analysis comprises the step of determining a profit margin and a time-to-turn for said one or more past retail commodity products using said retrieved retail market performance data.

5. The method of claim 2, wherein said step of performing a seasonality analysis comprises the step of quantifying a seasonal effect on a past auction commodity price paid for said one or more past auction commodity products.

6. The method of claim 1, wherein said step of performing one or more elasticity computations comprises the step of determining a self-price elasticity value representing a percentage decrease in said past auction commodity price paid for a first one of said one or more past auction commodity products due to a percentage increase in auction volume of a second one of said past auction commodity products, said first and second past auction commodity products having the same commodity model type and the same commodity model year.

7. The method of claim 6, wherein said step of performing one or more elasticity computations further comprises the step of determining a cross-price elasticity value representing a percentage decrease in said

past auction commodity price paid for a first one of said one or more past auction commodity products due to a percentage increase in auction volume of a second one of said one or more past auction commodity products, wherein said first and second past auction commodity products have different commodity model types.

8. The method of claim 7, wherein said step of performing one or more elasticity computations further comprises the step of determining a cross-price elasticity value representing a percentage decrease in said past auction commodity price for a first one of said one or more past auction commodity products due to a percentage increase in auction volume of a second one of said one or more past auction commodity products, wherein said first and second past auction commodity products have a different commodity model year.

9. The method of claim 2, further comprising the step of obtaining present auction commodity description data for said one or more present auction commodity products.

10. The method of claim 9, wherein said step of obtaining present auction commodity description data includes the steps of:

obtaining a present commodity usage measurement for said one or more present auction commodity products;

obtaining one or more present optional features associated with said one or more present auction commodity products; and

obtaining a present auction type associated with said one or more present auction commodity products.

11. The method of claim 10, further comprising the step of obtaining past auction commodity description data for said one or more past auction commodity products..

12. The method of claim 11, wherein said step of obtaining past auction commodity description data includes the steps of:

- obtaining a past commodity usage measurement for said one or more past auction commodity products;

- obtaining one or more past optional features associated with said one or more past auction commodity products; and

- obtaining a past auction type associated with said one or more past auction commodity products.

13. The method of claim 12, further comprising the step of determining an initial forecast auction commodity price for each of said one or more present auction commodity products using said past auction commodity description data and said present auction commodity description data.

14. The method of claim 13, wherein said step of determining an initial forecast auction commodity price for each of said one or more present auction commodity products includes the steps of:

- performing a usage measurement depreciation analysis;

- performing a commodity optional feature analysis; and

- performing an auction type analysis.

15. The method of claim 14, wherein said step of performing a usage measurement depreciation analysis comprises the steps of:

- defining one or more past commodity product groups, wherein each of said one or more past commodity product groups is representative of said one or more past auction commodity products that have the same commodity model type and the same commodity model year; and

generating a usage measurement deduction curve for each of said one or more past auction commodity product groups.

16. The method of claim 15, wherein said step of generating a usage measurement deduction curve comprises using said past auction commodity usage measurements associated with said past commodity product group to generate said usage measurement deduction curve.

17. The method of claim 15, wherein said step of determining an initial forecast auction commodity price further comprises the step of determining a usage measurement deduction for said one or more present auction commodity products using said generated usage measurement deduction curve for said past commodity product group having the same commodity model type and the same commodity model year as said one or more present auction commodity products.

18. The method of claim 15, wherein said step of performing a commodity optional feature analysis comprises the steps of:

defining one or more past commodity product feature groups, wherein each of said one or more past commodity product feature groups is representative of said one or more past auction commodity products that have the same past optional features; and

generating a past commodity product feature model for each of said one or more past commodity product feature groups.

19. The method of claim 18, wherein said step of performing an auction type analysis comprises the steps of:

defining one or more past auction type groups, wherein said one or more past auction type groups is representative of said one or more past auction commodity products that are associated with the same past auction type; and

generating a past auction type model for each of said one or more past auction type groups.

20. The method of claim 19, wherein said step of determining an initial forecast auction commodity price for each of said one or more present auction commodity products includes the steps of:

determining a confidence distance between said one or more present auction commodity products and said one or more past auction commodity products;

assigning a confidence weight to said one or more past auction commodity products based on said determined confidence distance; and

setting said initial auction forecast price for said one or more present auction commodity products equal to a weighted average of said past auction price paid for said one or more past auction commodity products using said assigned confidence weight.

21. The method of claim 20, further comprising the step of retrieving present retail market condition data, present commodity product demand data based on seasonal changes, present commodity product supply data, and present auction volume data.

22. The method of claim 21, wherein said step of generating an auction forecast price step generates said auction forecast price by adjusting said set initial auction forecast price for said one or more present auction commodity products using said determined price level adjustments, said present retail market condition data, said present commodity product demand data, said present commodity product supply data, and said present auction volume data.

23. The method of claim 22, wherein said step of generating an optimized auction commodity distribution plan comprises the steps of:

obtaining optimization data, said optimization data including said generated forecast price for each of said one or more present auction commodity products, said present auction commodity product description data, a shipping cost, a shipping time, a time-value adjustment, a current inventory listing for each of said one or more auction sites, a capacity constraint for each of said one or more auction sites, and a local elasticity measurement for each of said one or more auction sites;

obtaining one or more optimization parameters, said optimization parameters including a population size, one or more genetic operators, and a maximum iteration number;

representing an initial auction commodity distribution plan as a genome, where said genome is an array of one or more commodity product objects and further wherein each of said commodity objects is comprised of said present commodity description data for one of said present auction commodity products, a source location, and a target location;

generating a number of first generation genomes, said number being equal to said population size;

determining a first fitness value for each commodity product object in each genome of said first generation genomes;

determining a second fitness value for each respective genome by adding said determined first fitness values together; and

evolving said first generation of genomes.

24. The method of claim 23, wherein said step of evolving comprises the steps of:

selecting one of said one or more genetic operators;

selecting one or more of said first generation genomes to modify based on said determined second fitness value;

modifying said selected one or more first generation genomes using said selected genetic operator, thereby producing one or more modified genomes;

determining a third fitness value for each of said one or more modified genomes;

randomly selecting one of said one or more modified genomes based on a probability value; and

generating an evolved generation of genomes that includes said selected modified genome and repeating said evolving step until a stop condition is satisfied.

25. The method of claim 24, wherein said first and third fitness values are determined in accordance with equation 1.

26. The method of claim 25 wherein said stop condition is satisfied when a convergence threshold is satisfied or when said maximum iteration number is exceeded.

27. The method of claim 26, wherein after said stop condition is satisfied, said evolved generation of genomes is selected as said optimized auction commodity distribution plan.

28. The method of claim 27, further comprising the step of outputting said optimized auction commodity distribution plan.

29. A system for generating an optimized auction commodity distribution plan comprising:

means for performing one or more elasticity computations for one or more past auction commodity products sold at one or more auction sites;



means for generating an auction forecast price for one or more present auction commodity products to be auctioned at said one or more auction sites using said one or more elasticity computations, wherein each of said present auction commodity products and said past commodity products have an associated commodity model type and a commodity model year; and

means for generating an optimized auction commodity distribution plan for said one or more present auction commodity products using said generated forecast price.

30. The system of claim 28, wherein said means for generating an auction forecast price comprises:

means for obtaining retail market performance data for one or more past retail commodity products sold at one or more retail sites;

means for obtaining regional data relevant to said one or more retail sites;

means for performing a regional trend analysis of sales for said one or more past retail commodity products using said retail market performance data and said regional data;

means for performing a seasonality analysis for said one or more past auction commodity products;

means for generating a time-series model for said one or more past retail commodity products using said regional trend analysis and said seasonality analysis; and

means for determining a price-level adjustment for said one or more present auction commodity products based on said elasticity computations and said time-series model.

31. The system of claim 30, wherein said means for obtaining regional data relevant to said one or more retail sites comprises:

means for retrieving local unemployment data;

means for retrieving gross product growth data; and  
means for retrieving population growth data.

32. The system of claim 30, wherein said means for performing a regional trend analysis comprises means for determining a profit margin and a time-to-turn for said one or more past retail commodity products using said retrieved retail market performance data.

33. The system of claim 30, wherein said means for performing a seasonality analysis comprises means for quantifying a seasonal effect on a past auction commodity price paid for said one or more past auction commodity products.

34. The system of claim 29, wherein said means for performing one or more elasticity computations comprises means for determining a self-price elasticity value representing a percentage decrease in said past auction commodity price paid for a first one of said one or more past auction commodity products due to a percentage increase in auction volume of a second one of said past auction commodity products, said first and second past auction commodity products having the same commodity model type and the same commodity model year.

35. The system of claim 34, wherein said means for performing one or more elasticity computations further comprises means for determining a cross-price elasticity value representing a percentage decrease in said past auction commodity price paid for a first one of said one or more past auction commodity products due to a percentage increase in auction volume of a second one of said one or more past auction commodity products, wherein said first and second past auction commodity products have different commodity model types.

36. The system of claim 35, wherein said means for performing one or more elasticity computations further comprises means for determining a cross-price elasticity value representing a percentage decrease in said past auction commodity price for a first one of said one or more past auction commodity products due to a percentage increase in auction volume of a second one of said one or more past auction commodity products, wherein said first and second past auction commodity products have a different commodity model year.

37. The system of claim 30, further comprising means for obtaining present auction commodity description data for said one or more present auction commodity products.

38. The system of claim 37, wherein said means for obtaining present auction commodity description data includes:

means for obtaining a present commodity usage measurement for said one or more present auction commodity products;

means for obtaining one or more present optional features associated with said one or more present auction commodity products; and

means for obtaining a present auction type associated with said one or more present auction commodity products.

39. The system of claim 38, further comprising means for obtaining past auction commodity description data for said one or more past auction commodity products.

40. The system of claim 39, wherein said means for obtaining past auction commodity description data includes:

means for obtaining a past commodity usage measurement for said one or more past auction commodity products;

means for obtaining one or more past optional features associated with said one or more past auction commodity products; and

means for obtaining a past auction type associated with said one or more past auction commodity products.

41. The system of claim 40, further comprising means for determining an initial forecast auction commodity price for each of said one or more present auction commodity products using said past auction commodity description data and said present auction commodity description data.

42. The system of claim 41, wherein said means for determining an initial forecast auction commodity price for each of said one or more present auction commodity products includes:

means for performing a usage measurement depreciation analysis;

means for performing a commodity optional feature analysis;  
and

means for performing an auction type analysis.

43. The system of claim 42, wherein said means for performing a usage measurement depreciation analysis comprises:

means for defining one or more past commodity product groups, wherein each of said one or more past commodity product groups is representative of said one or more past auction commodity products that have the same commodity model type and the same commodity model year; and

means for generating a usage measurement deduction curve for each of said one or more past auction commodity product groups.

44. The system of claim 43, wherein said means for generating a usage measurement deduction curve comprises using said past auction commodity usage measurements associated with said past commodity product group to generate said usage measurement deduction curve.

45. The system of claim 43, wherein said means for determining an initial forecast auction commodity price further comprises means for determining a usage measurement deduction for said one or more present auction commodity products using said generated usage measurement deduction curve for said past commodity product group having the same commodity model type and the same commodity model year as said one or more present auction commodity products.

46. The system of claim 43, wherein said means for performing a commodity optional feature analysis comprises:

means for defining one or more past commodity product feature groups, wherein each of said one or more past commodity product feature groups is representative of said one or more past auction commodity products that have the same past optional features; and

means for generating a past commodity product feature model for each of said one or more past commodity product feature groups.

47. The system of claim 46, wherein said means for performing an auction type analysis comprises:

means for defining one or more past auction type groups, wherein said one or more past auction type groups is representative of said one or more past auction commodity products that are associated with the same past auction type; and

means for generating a past auction type model for each of said one or more past auction type groups.

48. The system of claim 47, wherein said means for determining an initial forecast auction commodity price for each of said one or more present auction commodity products includes:

means for determining a confidence distance between said one or more present auction commodity products and said one or more past auction commodity products;

means for assigning a confidence weight to said one or more past auction commodity products based on said determined confidence distance; and

means for setting said initial auction forecast price for said one or more present auction commodity products equal to a weighted average of said past auction price paid for said one or more past auction commodity products using said assigned confidence weight.

49. The system of claim 48, further comprising means for retrieving present retail market condition data, present commodity product demand data based on seasonal changes, present commodity product supply data, and present auction volume data.

50. The system of claim 21, wherein said means for generating an auction forecast price comprises means for adjusting said set initial auction forecast price for said one or more present auction commodity products using said determined price level adjustments, said present retail market condition data, said present commodity product demand data, said present commodity product supply data, and said present auction volume data.

51. The system of claim 50, wherein said means for generating an optimized auction commodity distribution plan comprises:

means for obtaining optimization data, said optimization data including said generated forecast price for each of said one or more present auction commodity products, said present auction commodity product description data, a shipping cost, a shipping time, a time-value adjustment, a current inventory listing for each of said one or more auction sites, a capacity constraint for each of said one or more auction sites, and a local elasticity measurement for each of said one or more auction sites;

means for obtaining one or more optimization parameters, said optimization parameters including a population size, one or more genetic operators, and a maximum iteration number;

means for representing an initial auction commodity distribution plan as a genome, where said genome is an array of one or more commodity product objects and further wherein each of said commodity objects is comprised of said present commodity description data for one of said present auction commodity products, a source location, and a target location;

means for generating a number of first generation genomes, said number being equal to said population size;

means for determining a first fitness value for each commodity product object in each genome of said first generation genomes;

means for determining a second fitness value for each respective genome by adding said determined first fitness values together; and

means for evolving said first generation of genomes.

52. The system of claim 51, wherein said means for evolving said first generation of genomes comprises:

means for selecting one of said one or more genetic operators;

means for selecting one or more of said first generation genomes to modify based on said determined second fitness value;

means for modifying said selected one or more first generation genomes using said selected genetic operator, thereby producing one or more modified genomes;

means for determining a third fitness value for each of said one or more modified genomes;

means for randomly selecting one of said one or more modified genomes based on a probability value; and

means for generating an evolved generation of genomes that includes said selected modified genome and repeating said evolving step until a stop condition is satisfied.

53. The system of claim 52, wherein said first and third fitness values are determined in accordance with equation 1.

54. The system of claim 53 wherein said stop condition is satisfied when a convergence threshold is satisfied or when said maximum iteration number is exceeded.

55. The system of claim 53, wherein after said stop condition is satisfied, said evolved generation of genomes is selected as said optimized auction commodity distribution plan.

56. The system of claim 55, further comprising means for outputting said optimized auction commodity distribution plan.

57. A computer program product embodied on a computer useable medium comprising computer program logic stored therein for generating an optimized auction commodity distribution plan, the computer program logic comprising:



computer readable program code means for performing one or more elasticity computations for one or more past auction commodity products sold at one or more auction sites;

computer readable program code means for generating an auction forecast price for one or more present auction commodity products to be auctioned at said one or more auction sites using said one or more elasticity computations, wherein each of said present auction commodity products and said past commodity products have an associated commodity model type and a commodity model year; and

computer readable program code means for generating an optimized auction commodity distribution plan for said one or more present auction commodity products using said generated forecast price.

58. The computer program product of claim 28, wherein said computer readable program code means for generating an auction forecast price comprises:

computer readable program code means for obtaining retail market performance data for one or more past retail commodity products sold at one or more retail sites;

computer readable program code means for obtaining regional data relevant to said one or more retail sites;

computer readable program code means for performing a regional trend analysis of sales for said one or more past retail commodity products using said retail market performance data and said regional data;

computer readable program code means for performing a seasonality analysis for said one or more past auction commodity products;

computer readable program code means for generating a time-series model for said one or more past retail commodity products using said regional trend analysis and said seasonality analysis; and

computer readable program code means for determining a price-level adjustment for said one or more present auction commodity products based on said elasticity computations and said time-series model.

59. The computer program product of claim 28, wherein said computer readable program code means for obtaining regional data relevant to said one or more retail sites comprises:

computer readable program code means for retrieving local unemployment data;

computer readable program code means for retrieving gross product growth data; and

computer readable program code means for retrieving population growth data.

60. The computer program product of claim 59, wherein said computer readable program code means for performing a regional trend analysis comprises computer readable program code means for determining a profit margin and a time-to-turn for said one or more past retail commodity products using said retrieved retail market performance data.

61. The computer program product of claim 58, wherein said computer readable program code means for performing a seasonality analysis comprises computer readable program code means for quantifying a seasonal effect on a past auction commodity price paid for said one or more past auction commodity products.

62. The computer program product of claim 57, wherein said computer readable program code means for performing one or more elasticity computations comprises computer readable program code means for determining a self-price elasticity value representing a percentage decrease in said past auction commodity price paid for a first one of said one or more past auction commodity products due to a percentage increase in auction volume of a second one of said past auction commodity products, said first and second past auction commodity products having the same commodity model type and the same commodity model year.

63. The computer program product of claim 62, wherein said computer readable program code means for performing one or more elasticity computations further comprises computer readable program code means for determining a cross-price elasticity value representing a percentage decrease in said past auction commodity price paid for a first one of said one or more past auction commodity products due to a percentage increase in auction volume of a second one of said one or more past auction commodity products, wherein said first and second past auction commodity products have different commodity model types.

64. The computer program product of claim 63, wherein said computer readable program code means for performing one or more elasticity computations further comprises computer readable program code means for determining a cross-price elasticity value representing a percentage decrease in said past auction commodity price for a first one of said one or more past auction commodity products due to a percentage increase in auction volume of a second one of said one or more past auction commodity products, wherein said first and second

past auction commodity products have a different commodity model year.

65. The computer program product of claim 58, further comprising computer readable program code means for obtaining present auction commodity description data for said one or more present auction commodity products.

66. The computer program product of claim 65, wherein said computer readable program code means for obtaining present auction commodity description data includes:

computer readable program code means for obtaining a present commodity usage measurement for said one or more present auction commodity products;

computer readable program code means for obtaining one or more present optional features associated with said one or more present auction commodity products; and

computer readable program code means for obtaining a present auction type associated with said one or more present auction commodity products.

67. The computer program product of claim 66, further comprising computer readable program code means for obtaining past auction commodity description data for said one or more past auction commodity products.

68. The computer program product of claim 39, wherein said computer readable program code means for obtaining past auction commodity description data includes:

computer readable program code means for obtaining a past commodity usage measurement for said one or more past auction commodity products;

computer readable program code means for obtaining one or more past optional features associated with said one or more past auction commodity products; and

computer readable program code means for obtaining a past auction type associated with said one or more past auction commodity products.

69. The computer program product of claim 40, further comprising computer readable program code means for determining an initial forecast auction commodity price for each of said one or more present auction commodity products using said past auction commodity description data and said present auction commodity description data.

70. The computer program product of claim 69, wherein said computer readable program code means for determining an initial forecast auction commodity price for each of said one or more present auction commodity products includes:

computer readable program code means for performing a usage measurement depreciation analysis;

computer readable program code means for performing a commodity optional feature analysis; and

computer readable program code means for performing an auction type analysis.

71. The computer program product of claim 70, wherein said computer readable program code means for performing a usage measurement depreciation analysis comprises:

computer readable program code means for defining one or more past commodity product groups, wherein each of said one or more past commodity product groups is representative of said one or more past auction commodity products that have the same commodity model type and the same commodity model year; and

computer readable program code means for generating a usage measurement deduction curve for each of said one or more past auction commodity product groups.

72. The computer program product of claim 71, wherein said computer readable program code means for generating a usage measurement deduction curve comprises computer readable program code means for using said past auction commodity usage measurements associated with said past commodity product group to generate said usage measurement deduction curve.

73. The computer program product of claim 71, wherein said computer readable program code means for determining an initial forecast auction commodity price further comprises computer readable program code means for determining a usage measurement deduction for said one or more present auction commodity products using said generated usage measurement deduction curve for said past commodity product group having the same commodity model type and the same commodity model year as said one or more present auction commodity products.

74. The computer program product of claim 71, wherein said computer readable program code means for performing a commodity optional feature analysis comprises:

computer readable program code means for defining one or more past commodity product feature groups, wherein each of said one

or more past commodity product feature groups is representative of said one or more past auction commodity products that have the same past optional features; and

computer readable program code means for generating a past commodity product feature model for each of said one or more past commodity product feature groups.

75. The computer program product of claim 74, wherein said computer readable program code means for performing an auction type analysis comprises:

computer readable program code means for defining one or more past auction type groups, wherein said one or more past auction type groups is representative of said one or more past auction commodity products that are associated with the same past auction type; and

computer readable program code means for generating a past auction type model for each of said one or more past auction type groups.

76. The computer program product of claim 75, wherein said computer readable program code means for determining an initial forecast auction commodity price for each of said one or more present auction commodity products includes:

computer readable program code means for determining a confidence distance between said one or more present auction commodity products and said one or more past auction commodity products;

computer readable program code means for assigning a confidence weight to said one or more past auction commodity products based on said determined confidence distance; and

computer readable program code means for setting said initial auction forecast price for said one or more present auction commodity products equal to a weighted average of said past auction price paid for said one or more past auction commodity products using said assigned confidence weight.

77. The computer program product of claim 76, further comprising computer readable program code means for retrieving present retail market condition data, present commodity product demand data based on seasonal changes, present commodity product supply data, and present auction volume data.

78. The computer program product of claim 77, wherein said computer readable program code means for generating an auction forecast price comprises computer readable program code means for adjusting said set initial auction forecast price for said one or more present auction commodity products using said determined price level adjustments, said present retail market condition data, said present commodity product demand data, said present commodity product supply data, and said present auction volume data.

79. The computer program product of claim 78, wherein said computer readable program code means for generating an optimized auction commodity distribution plan comprises:

computer readable program code means for obtaining optimization data, said optimization data including said generated forecast price for each of said one or more present auction commodity products, said present auction commodity product description data, a shipping cost, a shipping time, a time-value adjustment, a current inventory listing for each of said one or more auction sites, a capacity



constraint for each of said one or more auction sites, and a local elasticity measurement for each of said one or more auction sites;

computer readable program code means for obtaining one or more optimization parameters, said optimization parameters including a population size, one or more genetic operators, and a maximum iteration number;

computer readable program code means for representing an initial auction commodity distribution plan as a genome, where said genome is an array of one or more commodity product objects and further wherein each of said commodity objects is comprised of said present commodity description data for one of said present auction commodity products, a source location, and a target location;

computer readable program code means for generating a number of first generation genomes, said number being equal to said population size;

computer readable program code means for determining a first fitness value for each commodity product object in each genome of said first generation genomes;

computer readable program code means for determining a second fitness value for each respective genome by adding said determined first fitness values together; and

computer readable program code means for evolving said first generation of genomes.

80. The computer program product of claim 79, wherein said computer readable program code means for evolving said first generation of genomes comprises:

computer readable program code means for selecting one of said one or more genetic operators;

computer readable program code means for selecting one or more of said first generation genomes to modify based on said determined second fitness value;

computer readable program code means for modifying said selected one or more first generation genomes using said selected genetic operator, thereby producing one or more modified genomes;

computer readable program code means for determining a third fitness value for each of said one or more modified genomes;

computer readable program code means for randomly selecting one of said one or more modified genomes based on a probability value; and

computer readable program code means for generating an evolved generation of genomes that includes said selected modified genome and repeating said evolving step until a stop condition is satisfied.

81. The computer program product of claim 80, wherein said first and third fitness values are determined in accordance with equation 1.

82. The computer program product of claim 81 wherein said stop condition is satisfied when a convergence threshold is satisfied or when said maximum iteration number is exceeded.

83. The computer program product of claim 81, wherein after said stop condition is satisfied, said evolved generation of genomes is selected as said optimized auction commodity distribution plan.

84. The computer program product of claim 83, further comprising computer readable program code means for outputting said optimized auction commodity distribution plan.